

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: DIETER GRAIGER ET AL-1

TITLE: METHOD OF CONNECTING A MOBILE CONTROL AND/OR MONITORING UNIT TO A MACHINE AND A CONTROL AND/OR MONITORING UNIT FOR SAME

PRELIMINARY AMENDMENT

ATT: BOX PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Preliminary to the examination of this patent application,
please amend the application as follows.

IN THE CLAIMS:

Cancel claims 1-25 and replace with new claims 26-50 as follows:

26. A method of connecting a mobile, electronic control and/or monitoring unit to at least one machine or at least one machine component in a group or a plurality of machines or machine components to be controlled and/or monitored, for example robots, characterised in that during a connection or log-on procedure between the control and/or monitoring unit and the respective machine or a distant point on the machine, a clear link or log-on connection is set up by means of interfaces to the selected, wireless direction-finder of the corresponding distant point or by means of transmitters and/or receivers tuned to the transmission range or reception range, having a limited, localised functional or operating range and, once the connection

has been acknowledged and established, the programmed control and/or monitoring of the machine or the machine component is managed via another, standard data transmission means, for example a hard-wired network and/or via a wireless link between the control and/or monitoring unit and the selected machine or selected machine component.

27. Method as claimed in claim 26, characterised in that clear signalling at least on the respective machine and/or on the control and/or monitoring unit indicates when a link or connection has been established.

28. Method as claimed in claim 26, characterised in that an active connection or log-on of a control and/or monitoring unit to one or more machines or machine components can not be terminated except by a deliberate or conscious log-off by the user, who must operate at least one control element of an input device of the control and/or monitoring unit or a control device of the machine or the machine component.

29. Method as claimed in claim 26, characterised in that the link or log-on connection is cyclically checked against a valid log-on process and control and/or monitoring of the machine is terminated either automatically or by the user, who simply quits by selecting the log-off option, if the selected link or log-on connection goes down or is interrupted.

30. Method as claimed in claim 26, characterised in that, during the log-on procedure of the control and/or monitoring unit, an identification number or code is transmitted and acknowledgement is returned, via the standard data transmission means or via the same wireless transmission channel, by the distant point or machine receiving this code, which also checks to ensure that the control and/or monitoring unit transmitting the code is valid.

31. Method as claimed in claim 26, characterised in that the connection between the control and/or monitoring unit and the respective machine to be controlled and/or observed is managed automatically on entering the functional or operating range of the transmitter and/or receiver device or simply by cancelling the potential connection.

32. Method as claimed in claim 26, characterised in that the connection between the control and/or monitoring unit and the respective machine to be controlled and/or observed is managed automatically when the selected connection becomes available or by actively cancelling the potential assignment or connection.

33. Method as claimed in claim 31, characterised in that the connection is cancelled by means of an operating element on the control and/or monitoring unit.

34. Method as claimed in claim 26, characterised in that the functional and operating range of the transmitters and/or receivers lies within a close immediate vicinity around the machines and/or around the control and/or monitoring unit.

35. Method as claimed in claim 26, characterised in that the wireless connection is provided by a radio link.

36. A control and/or monitoring unit having an input device with several operating elements and/or an optical display and having at least one interface to at least one control unit for one or more machines or machine components, for example robots, in particular for applying a method as claimed in claim 26, characterised in that another interface for a wireless connection system to a co-operating distant point in or on the machine to be controlled and/or monitored ensures that a clear and selective connection or link can be established with or on the control and/or monitoring unit or to one or more machines or machine components to be monitored.

37. Control and/or monitoring unit as claimed in claim 36, characterised in that the interface has a transmitter with a directional transmission characteristic.

38. Control and/or monitoring unit as claimed in claim 36, characterised in that the interface has a transmitter with a locally restricted transmission characteristic or a transmission

characteristic that is restricted to the area in the immediate vicinity.

39. Control and/or monitoring unit as claimed in claim 36, characterised in that the distant point comprises a receiver responding to the transmitter.

40. Control and/or monitoring unit as claimed in claim 36, characterised in that the distant point comprises a receiver with a defined, limited reception sensitivity.

41. Control and/or monitoring unit as claimed in claim 36, characterised in that the interface of the control and/or monitoring unit comprises a receiver for signals transmitted by the transmitter in the vicinity of a machine.

42. Control and/or monitoring unit as claimed in claim 36, characterised in that the connection link between the transmitter and the receiver is one-way.

43. Control and/or monitoring unit as claimed in claim 36, characterised in that the interface is provided as an optical transmitter for infrared signals or laser light.

44. Control and/or monitoring unit as claimed in claim 36, characterised in that the interface is provided as a transmitter for electromagnetic waves.

45. Control and/or monitoring unit as claimed in claim 36, characterised in that the co-operating transmitter and receiver are provided as a transponder system.

46. Control and/or monitoring unit as claimed in claim 36, characterised in that the interface is provided as an acoustic transmitter, for example for ultrasonic signals.

47. Control and/or monitoring unit as claimed in claim 36, characterised in that the interface is provided either in the form of contact pins and/or a contact rod or by means of an electrical contact surface with a complementary counter-contact on the machine to be controlled and/or monitored.

48. Control and/or monitoring unit as claimed in claim 36, characterised in that an operating element is provided on the input device for selectively establishing and/or terminating the connection.

49. Control and/or monitoring unit as claimed in claim 36, characterised in that a distance-measuring device and/or a position sensor is provided for detecting the distance of the control and/or monitoring unit relative to a machine or a machine component.

50. Control and/or monitoring unit as claimed in claim 36, characterised in that the interface is provided as a transmitter

and/or receiver for signals to and/or from a co-operating distant point or transmitter and/or receiver, which is disposed in the immediate vicinity of the machines to be controlled and/or monitored.

REMARKS

By this Preliminary Amendment, claims 1-25 have been cancelled and replaced with new claims 26-50. No new matter has been introduced. Entry of this amendment is respectfully requested.

Respectfully submitted,
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I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10, on the date indicated above, and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.


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